IL'IN, V.A., red.; KOLBANOVSKIY, V.N., red.; KOL'MAN, E., red.; VIKTOROVA, V., red.; CHERNYKH, I., mladshiy red.; MOSKVINA, R., tekhn. red.

[Philosophical problems on cybernetics] Filosofskie voprosy kibernetiki. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 391 p. (MIRA 14:6)

(Cybernetics)

KOLBANOVSKIY, V. N. (Professor)

"On Certain Disputed Questions of Cybernetics."

Filosofskiye voprosy kibernetiki (Philosophical Problems of Cybernetics), Publishing House of Socio-Economic Literature, Moscow, 1961 392 p.

KOLBANOVSKIY, V.N.

"Mental endowment" by N.S. Leites. Reviewed by V.N. Kolbanovskii.
Vop.psikhol. 7 no.1:154-156 Ja-F '61. (MIRA 14:3)

1. Institut psikhologii Akademii pedagogicheskikh nauk RSFSR, Moskva.
(Ability) (Child study)
(Leites, N.S.)

PETRUSHEVSKIY, S.A., otv. red.; KOLBANOVSKIY, V.N., red.; PLATONOV G.V., red.; SHAKHPARONOV, M.I., red.; SHIROKOV, M.F., red.; VIGDOROVICH, M.I., red.

[Dialectical materialism and present-day natural science; materials of the All-Russian Seminar of Lecturers in Social Sciences on philosophy problems of present-day natural science] Dialekticheskii materializm i sovremennoe estestvoznanie; sbornik materialov Vserossiiskogo seminara prepodavatelei obshchestvennykh nauk po filosofskim voprosam sovremennogo estestvoznaniia. Moskva, Izd-vo Mosk. univ., 1964. 403 p. (MIRA 17:7)

1. Moscow. Institut povysheniya kvalifikatsii prepodavateley obshchestvennykh nauk. Kafedra dialekticheskogo i istoricheskogo materializma.

ZELENKO, Genrikh Iosifovich; BLINCHEVSKIY, Fridel' L'vovich; ZHIDELEV, M.A., nauchnyy red.; KOLBANOVSKIY, V.V., red.; SAVCHENKO, Ye.V., tekhn.red.

[Soviet technical vocational education at a new stage] Sovetskoe professional'no-tekhnicheskoe obrazovanie na novom etape. Moskva, Izd-vo "Znanie," 1959. 47 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.2., Filosofiia, no.32) (MIRA 12:11)
(Vocational education)

SOKHAN', Lidiya Vasil'yevna, kand.filosof.nauk; NIKITIN, P.A., red.; KOLBANOVSKIY, V.V., red.; ATROSHCHENKO, L.Ye., tekhn.red.

[People of inspiring work] Liudi vdokhnovennogo truda. Moskva, Izd-vo "Znanie," 1960. 29 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii, Ser.2, Filosofiia, no.20). (MIRA 13:7)

(Efficiency, Industrial)

L 16993-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

S/204/63/003/002/002/006

AUTHOR: Kolbanovskiy, Yu., Bogoslovskaya, T.

TITLE: Radiation polymerization of n-heptene in the presence of $TiCl_4$

PERIODICAL: Neftekhimiya, v. 3, no. 2, 1963, 222-226

TEXT: The radiation polymerization of n-heptene-1 in the presence of $TiCl_4$ and also the influence of the dose, dose strength and radiation temperature, amount of catalyst, and dilution on the yield of the polymer are studied. It is shown that in dilute solutions and at lowered temperatures the optimum conditions are created for polymerization with $TiCl_4$. In calculating the absorption energy only for a monomer the values of the radiation-chemical yields are $\sim$ 50mol/100e.v. It is established that the yield of polymer depends on the dose strength to a degree of 0.8. There are 5 figures. The most important English-language reference reads as follows: A. G. Evans, E. D. Owen, J. Chem. Soc., 12, 4123, 1959.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR im. A. V. Topchiyeva (Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

SUBMITTED: November 13, 1962

Card 1/1

KOL'BANOVSKIY, YU. A.

USSR/Chemistry - Catalysis

Card 1/1 Pub. 22 - 27/52

Authors : Lavrovskiy, K. P., Memb. Corresp., Acad. of Sc., USSR; and Kol'banovskiy, Yu. A.

Title : The mechanism of heterogeneous catalysis over oxide catalysts

Periodical : Dok. AN SSSR 101/4, 687-688, Apr 1, 1955

Abstract : Scientific data are presented regarding the mechanism of heterogeneous catalysis (catalytic isomerization, hydrogenation, etc) accomplished by means of oxide catalysts: CrO, ZnO, VO containing polyvalent cations and WS, MoS_2, NiS catalysts. The existence on the surface of oxide catalysts of ion and radical type compounds is explained. It is shown that products synthesized over metallic catalysts should have a lesser content of branched hydrocarbons than the products synthesized over oxide catalysts. Five USSR references (1934-1954). Table.

Institution : Acad. of Sc., USSR, Petroleum Institute

Submitted : December 11, 1954

KOLBANOVSKIY, Yu. A.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor Fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62581

Author: Mironov, S. I., Gal'pern, G. D., Kolbanovskiy, Yu. A.

Institution: None Petroleum Inst. AS USSR

Title: On Temperatures of Formation and Conversion of Petroleum

Original Periodical: Dokl. AN SSSR, 1955, 103, No 4, 667-668

Abstract: On the basis of data concerning hydrocarbon composition have been calculated equilibrium temperatures of 32 varieties of petroleum, on the basis of which was calculated the mean temperature for these petroleum varieties which is ~170°. Calculation of temperatures was done according to approximate formulas for the systems cyclohexane-methylcyclopentane, methyl cyclohexane-ethyl cyclopentane; n-hexane-2 and 3-methyl pentanes, 2,2- and 2,3-dimethyl butanes; n-heptane-2,2-, 2,4- and 2,3-dimethyl pentanes, 2- and 3-methyl hexanes, 3,3-dimethyl pentane, 2,2,3-trimethyl butane, 2-ethyl pentane.

Card 1/1

KOLBANOVSKIY, Yu. A. and LAVROVSKIY, K. P.

"Methods of Utilizing Atomic Energy in the Chemical Technology of Petroleum," Khim. i Tekh. Topliva, No.1, p. 7217, 1956

Translation 1071265

KOLBANOVSKIY, YU. A.

USSR/Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry. Catalysis B-9

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3844

Author : Lavrovskiy K.P., Kolbanovskiy Yu.A.
Inst : Institute of Petroleum, Academy of Sciences USSR
Title : The Role of Ionization Potential in Electron Catalysis at Metals

Orig Pub : Tr. In-ta nefti AN SSSR, 1956, 8, 92-93

Abstract : The authors consider the film of adsorbed gas at the surface of a metal catalyst as a semi-conductor and assume that for the same reaction of hydrogen transfer, the ratio of energy of activation values E at Pt and Pd must be approximately equal to the ratio of ionization potentials (U) of these metals. From the known values of Ein, the dehydrogenation of piperidine and cyclohexane, hydrogenation of methyl acetylene and cyclopropane and the oxidation of iso-octane at Pt, the values of E of these

Card 1/2

5(4)

AUTHORS: Brodskiy, A. M., Kolbanovskiy, Yu. A., Filatova, Ye. D., Chernysheva, A. S. SOV/20-122-6-22/49

TITLE: On the Radiolysis of Heptane (O radiolize geptana)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 6, pp 1035-1038 (USSR)

ABSTRACT: The present paper investigates the γ-radiolysis of normal heptane in the liquid phase and the radiolysis of a solution of dibenzyl-sulfide in heptane. These investigations were carried out mainly for the following purposes: Determination of the exact kinetics of radiolysis in the initial ranges, determination of the influence of an interruption of irradiation, and determination of the exact composition and yield of the gas within a wide dose-interval (extending over more than 3 orders of magnitude). Dibenzyl-sulfide ($5.011 \cdot 10^{-4}$M)* was added to the heptane for the purpose of clearing up the particular feature of the behavior of aromatic sulphur compounds in the radiation field and for the purpose of determining the influence exercised by the presence of similar additions upon paraffin radiolysis. In the case of small doses, the X-ray

Card 1/3

apparatus РУП-3, and for larger doses Co^{60} were used as radiation sources. In the case of small doses, direct proportionality between the gas yield and the duration of radiation was observed. Interruption of irradiation caused a synchronous interruption of gas separation. Otherwise, no "radiation hysteresis" with respect to gas separation was observed, an assertion, which is strictly true. A diagram shows the dependence of the hydrogen- and methane yield on the dose for pure heptane and for a dibenzyl-sulfide solution. Dibenzyl-sulfide reduces heptane radiolysis. Next, the fraction of C_2-C_5 gas is investigated; the results of the gas analysis are shown in a table. There follow some comments on the results obtained: 1) The nonlinear effects begin with integral doses of eV/ml and occur in all components. 2) The direct disruption of C-C bonds is of particular importance in the radiolysis of alkanes. 3) The presence of acetylene in the gaseous products of radiolysis is pointed out. 4) Also the great variety of gaseous products of radiolysis is of essential importance (among them there are comparatively many isomeric structures). 5) The gaseous products of a dibenzyl-sulfide solution contain no hydrogen sulfide. In this case the protective effect is due to a transmission of the excitation.

On the Radiolysis of Heptane

SOV/2o-122-6-22/49

The authors thank S. I. Mironov, Academician, and K. P. Lavrovskiy, Corresponding Member, AS USSR, for valuable advice, and they also thank N. N. Naymushin for his assistance in carrying out gas analyses. There are 2 figures, 2 tables, and 5 references, 4 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute of the Academy of Sciences, USSR)

PRESENTED: June 4, 1958, by S. I. Mironov, Academician

SUBMITTED: June 3, 1958

Card 3/3

KOLBANOVSKIY, Y. A., TOPCHIYEV, A. V., LAVROVSKIY, K. P., PRODSKIY, A. M., POLAK, L. S., and others.

"Studying the Radiation Chemistry of Petroleum Hydrocarbons and the Application of Nuclear Radiation in the Oil Processing Industry and inOil-Chemical Synthesis."

Report submitted at the Fifth World Petroleum Congress, 30 May - 5 June 1959. New York.

~~5(4)~~ 5.1190

66493

SOV/20-129-1-40/64

AUTHORS: Kolbanovskiy, Yu. A., Kustanovich, I. M., Polak, L. S., Shcherbakova, A. S.

TITLE: Electron Paramagnetic Resonance Spectra for Some Catalysts of Catalyst - Hydrocarbon Systems and the Action of γ-Rays on Them

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 1, pp 145-148 (USSR)

ABSTRACT: The study of the electron paramagnetic resonance (epr) spectra of catalysts and catalyst - hydrocarbon systems represents a new method of investigating catalysts as well as chemosorptive and catalytic processes. The authors used typical oxide catalysts, such as are applied for cracking, dehydrogenation, hydrogenation, desulfurization, etc. processes (aluminum oxide, aluminum silicate, aluminum oxide-molybdenum oxide, $CoO.Al_2O_3.MoO_3$, $Cr_2O_3.Al_2O_3$ activated by K_2O and molybdenum sulfide). The spectra of the catalysts investigated are discussed (Figs 1-4). The final results are summarized: Independent of irradiation the adsorption of hydrocarbons on Al_2O_3- and aluminum silicate

Card 1/2

Electron Paramagnetic Resonance Spectra for Some Catalysts of Catalyst - Hydrocarbon Systems and the Action of γ-Rays on Them

catalysts has but little effect on their epr-spectra. Irradiation produces marked changes in the epr-spectra of aluminum oxide - molybdenum oxide catalysts containing adsorbed hydrocarbons. The temperature dependence of the concentration of centers with unpaired spins indicates the existence of activation barriers. The majority of spectra investigated had no hyperfine structure, the one exception being the aluminum silicate cracking catalyst after adsorption of heptane and heptene and after irradiation. There are 4 figures and 3 Soviet references.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petroleum-chemical Synthesis of the Academy of Sciences, USSR)

PRESENTED: June 8, 1959, by A. V. Topchiyev, Academician

SUBMITTED: June 2, 1959

S/020/60/131/06/42/071
B004/B007

AUTHORS: Kolbanovskiy, Yu. A., Smirnov, B. A.

TITLE: Calculation of the Yields of the Radiolysis Products of Alkanes

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 6, pp. 1380 - 1382

TEXT: The aim of the present paper is the setting up of equations for the determination of the yield of the various fractions formed in the radiolysis of alkanes. Equations (1) - (5) are written down, which represent the concentration of the individual fractions (hydrogen, mono-olefines, alkanes with a smaller and a greater molecular weight than the initial substance). A special investigation in the linear and nonlinear part of the radiolysis leads to equations (6) and (7). That range is defined as linear, in which no products of secondary reactions as yet occur. As an example, the fractions of n-heptane are calculated. In the linear range the following is assumed for 100 ev of absorbed energy: $G(H_2) = 4.9$, G (saturated decay products) $\approx$ G (unsaturated decay products) = 0.7, G (mono-olefines with $C_{x \geq n}$) = 2. (n = number of carbon atoms in the initial product). For 1 ml of n-heptane and a dose of 10^{19} ev/ml the result of the calculation for

Card 1/2

S/020/60/135/002/026/036
B004/B056

AUTHORS: Kolbanovskiy, Yu. A. and Polak, L. S.

TITLE: Kinetic Equations of Radiochemical Monomolecular Reactions not Taking a Chainlike Course

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 2, pp. 361-364

TEXT: In the introduction, the authors note that for many reactions, which are of importance in practice, such as inhibited radiolysis of hydrocarbons, radiolysis at large integral doses, neither general nor special kinetic equations exist. Therefore, they set themselves the task of deriving equations for various not chain-like monomolecular radiochemical processes of a substance X. They assume that X has two kinds of excited states, $X^*_{(1)}$ and $X^*_{(2)}$, and an arbitrary number m of modes of decomposition. The authors studied: A) the range of small integral doses (consumption of X and inhibiting action of the final products are negligibly small). The

Card 1/4

Kinetic Equations of Radiochemical Monomolecular Reactions not Taking a Chainlike Course

S/020/60/135/002/026/036
B004/B056

following is written down: 1) $X \rightarrow X^*$, excitation by radiation: $W_1 = K_1 I$ (1) (I - differential doserate in ev/cm^3.sec). 2) $X^* \longrightarrow X$ (+ $h\nu$), dissipation and radiation: $W_2 = K_2[X^*]$ (2). 3) $X^* \longrightarrow$ products of decomposition (m - modes of decomposition or isomerization): $W_3 = \sum_{i=3}^{m} K_i[X^*]$ (3). For two excited states one finds: $W_3 = I\left[K_{(1)1}\overline{K}_{(1)3}/(K_{(1)2}+\overline{K}_{(1)3}) + K_{(2)1}\overline{K}_{(2)3}/K_{(2)2} + \overline{K}_{(2)3}\right]$ (7). B) The kinetics of the radiochemical reaction with small inhibitory admixtures which act as "catchers" and thus as protectors. 4) $X^* + B \longrightarrow X + B^*$ (B = inhibitor): $W_4 = K_4[X^*][B]^{n/3}$ (9); $n \leq 3$ is an integer. C) Radiochemical processes at the mean integral dose and with an accumulation of excitation acceptors A in the reaction products. On the assumption that A is formed from $X^*_{(2)}$ and inhibits the decomposition of $X^*_{(1)}$, one obtains: $W_{(2)3} = \overline{K}_{(2)3}[X^*_{(2)}] = d[A]/dt$ (10), and in consideration

Card 2/4

of the process 5): $X^*_{(1)} + A \rightarrow A^* + X$, W_3 becomes equal to $W_3 = I[X]\left[\overline{K}_{(2)} + 1/(\overline{K}_{(1)} + \overline{K}_A[A]^{n/3})\right]$ (16). D) The kinetics of radiochemical reactions inhibited by small admixtures of a substance, the protective effect of which is based upon its consumption: $X^*_{(1)} + D \rightarrow X + D^*$. An equation analogous to equation (16) is obtained in which $[A]$ is substituted by $[D]$. Whereas $[A]$ increased with an increase in the dose, $[D]$ decreases in the course of irradiation. For the case in which the decomposition probability for D^* is not equal to one: 7) $D^* \rightarrow D$; $W_7 = K_7[D^*]$ and 8) $W_8 = K_8[D^*]$, the value of K_D is influenced by the ratio K_8/K_7 without the form of the equation being changed. E) Kinetics of the monomolecular radiochemical reaction with an addition of the substance X to a medium M which transfers the radiation energy to X. Additional processes occur: 9) $M \rightsquigarrow M^*$; $W_9 = K_9 I$, 10) $M^* \rightarrow M$; $W_{10} = K_{10}[M^*]$;

Kinetic Equations of Radiochemical Monomolecular Reactions not Taking a Chainlike Course

S/020/60/135/002/026/036
B004/B056

11) $M^* + X \longrightarrow M + X^*$; $W_{11} = K_{11}[M^*][X]^{n/3}$, and one obtains:

$W_s = K_3[X^*] = K_1K_3I[X]/(K_2 + K_3) + K_3K_9K_{11}I[X]^{n/3}/[(K_2 + K_3)(K_{10}+K_{11}[X]^{n/3})]$ (22). For $K_2 = 0$, $n = 3$, this equation is identical with that derived by V. A. Krongauz and Kh. S. Bagdasar'yan for the radiolysis of benzoyl peroxide in benzene (Ref. 3). As the relations set up by the authors are valid for all principal kinds of monomolecular, not chain-like radiochemical processes, special experiments may be carried out to study the kinetic parameters. There are 3 references: 1 Soviet and 2 US.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

PRESENTED: June 3, 1960 by A. V. Topchiyev, Academician

SUBMITTED: June 3, 1960

Card 4/4

KOLBANOVSKIY, Yu. A.

Cand Chem Sci - (diss) "Study of homogenous and heterogeneous radiolysis of alkanes." Moscow, 1961. 17 pp; (Academy of Sciences USSR, Inst of Electrochemistry); 150 copies; price not given; list of author's works on pp 16-17 (12 entries); (KL, 7-61 sup, 222)

S/195/61/002/001/006/006
B101/B216

AUTHOR: Kolbanovskiy, Yu. A.

TITLE: Problems of kinetics and mechanism of radiation-chemical reactions (Second All-Union Conference on Radiation Chemistry)

PERIODICAL: Kinetika i kataliz, v. 2, no. 1, 1961, 154-159

TEXT: The Vtoroye Vsesoyuznoye soveshchaniye po radiatsionnoy khimii (Second All-Union Conference on Radiation Chemistry) organized by the Otdeleniye khimicheskikh nauk AN SSSR (Department of Chemical Sciences AS USSR) and Gosudarstvennyy komitet Soveta Ministrov SSSR po khimii (State Committee on Chemistry of the Council of Ministers USSR), was held in Moscow on October 10-14, 1960. Intersection sessions were mainly devoted to general theoretical problems, all other subjects being treated in the sections: (1) Radiation effects on aqueous solutions; (2) radiation effects on organic substances; (3) radiation polymerization and radiation effects on polymers; (4) radiation effects on solids; and (5) problems concerning the technique of radiation-chemical studies. The present report

Card 1/8

only mentions lectures relating to problems concerning the kinetics and mechanism of radiation-chemical reactions. (A) Intersection sessions: V. L. Tal'roze and S. Ya. Pshezhetskiy delivered the opening lecture on "Primary events and mechanism of some radiation-chemical reactions." M. V. Gur'yev, "'Local theory' of mass spectra." G. K. Lavrovskaya, M. I. Markin, V. L. Tal'roze, "Exchange of charge between slow ions and polyatomic molecules." V. V. Boldyrev, "On the mechanism of the effect of previous irradiation on the rate of subsequent thermal decomposition of a solid." Kh. S. Bagdasar'yan discussed energy transfer in organic systems, and suggested a scheme involving formation of a complex with charge transfer at interaction between excited and nonexcited molecules. Yu. A. Kolbanovskiy and L. S. Polak suggested a semiempirical formula for studying the dependence of the inhibition effect on the concentration of the admixture. Kh. S. Bagdasar'yan, N. S. Izrailevich, and V. A. Krongauz drew attention to the protective action of phenyl rings during radiolysis of alkyl benzenes. L. S. Polak and A. S. Shcherbakova also discussed the protective action of aromatic admixtures. V. I. Gusynin and V. L. Tal'roze studied the quenching of luminescence in the system dioxane - terphenyl - normal C_1 - C_9 alcohols. Section 1:

S/195/61/002/001/006/006
B101/B216

V. V. Voyevodskiy, "Mechanism of radiolysis of water;" P. I. Dolin and B. V. Ershler, "Mechanism of radiation-chemical transformations in aqueous solutions and the two-radical model of Dyne and Kennedy (1958)." B. V. Ershler and G. G. Myasishcheva, "Radiolysis of dilute solutions of H_2, O_2, and H_2O_2 in water." V. A. Sharpatyy and M. A. Proskurnin, "Radiolysis of alkaline, nitrogen-saturated nitrate solutions." V. N. Shubin, P. I. Dolin, and Z. L. Krylova studied the radiolysis of H_2-saturated aqueous solutions under pressure. They found the Fe^{2+} and Fe^{3+} yields to be related to the reaction $H + H^+ \rightleftharpoons H_2^+$. V. S. Lapik, Z. I. Fedorovich, and A. M. Kabakchi observed that during radiolysis of sodium nitrate solutions the yields of nitrite and molecular O_2 depended on the "direct action" of radiation. L. G. Bugayenko observed the same effect at reduction of the perchlorate ion. M. A. Proskurnin, "Radiation-chemical transformations of organic compounds in aqueous solution." In the course of this lecture, he mentioned the addition of OH ion to nitrate ion observed by V. A. Sharpatyy and Yu. N. Molin. Ye. V. Barelko, L. I.

Kartasheva, M. A. Proskurnin, "Role of the aqueous phase as sensitizer in radiation-chemical oxidation of benzene." This effect is much slighter in radiolysis of alcohols (P. N. Komarov, Ye. V. Barelko, M. A. Proskurnin). Reports on ion-radicals formed by interaction of H and OH with anions were also read by V. D. Orekhov, V. V. Sarayeva, A. I. Chernova, A. V. Vannikov, A. A. Zansokhova, S. A. Safarov, and B. F. Bogatikov. D. M. Shub, V. P. Belokopytov, and V. I. Veselovskiy studied the radiation-chemical decomposition of an O_2-saturated potassium oxalate solution in the presence of suspended ZnO. M. A. Proskurnin, A. S. Baberkin, and N. P. Krushinskaya, "Radiation-chemical transformation of aqueous CCl_4 solution in the presence of catalysts." Yu. A. Kolbanovskiy, L. S. Polak, and E. B. Shlikhter, "Radiolysis of an oxide-catalyst system and of hydrocarbons adsorbed to its surface." Section 2: (A) Radiolysis of hydrocarbons. L. S. Polak read an introductory report. A. M. Brodskiy, K. P. Lavrovskiy, V. B. Titov, A. V. Topchiyev, V. Ye. Glushnev, V. D. Timofeyev, N. Ya. Chernyak, V. I. Spitsyn, I. V. Vereshchinskiy, P. Ya. Glazunov, G. G. Ryabchikova, and G. K. Sibirskaya reported on investigations at higher temperatures. V. G. Nikol'skiy, N. Ya. Buben, I. M.

Kustanovich, N. M. Rytova, V. G. Berezkin, V. A. Shakhray, A. T. Koritskiy, V. N. Shamshev, Yu. N. Molin, I. I. Chkheidze, V. V. Voyevodskiy, V. K. Yermolayev, Ye. L. Frankevich, and V. L. Tal'roze discussed the radiolysis of frozen and solid hydrocarbons. (B) Radiation processes in organic systems, with an introduction by N. A. Bakh. N. A. Slavinskaya, S. A. Kamenetskaya, S. Ya. Pshezhetskiy, and G. P. Zhitneva studied the kinetics of butane oxidation by fast electrons. V. V. Sarayeva, N. A. Bakh, and V. I. Dakin found that the decomposition and oxidation of diisopropyl ether proceeded by a chain mechanism. Yu. L. Khmel'nitskiy, I. I. Melekhonova, and V. V. Nesterovskiy reported on the oxidation of paraffin by gamma radiation. B. M. Mikhaylov and V. G. Kiselev studied the oxidation of ethylene and propylene by O_2 under the action of fast electrons. R. V. Dzhagatspanyan, V. I. Zetkin, and Ye. N. Zykova discussed their studies of sulfoxidation of n-alkanes with SO_2 and O_2 under the action of gamma radiation. Section 3: (A) Radiation polymerization. Kh. U. Usmanov, U. N. Musayev, and R. S. Tillayev, "Graft polymers of acrylonitrile on polyvinyl chloride." S. A. Azimov, N. V. Kordub, S. I. Slepakova, and Kh. U. Usmanov, "Graft polymers of acrylonitrile

and styrene + acrylonitrile on silk and Caprone." R. S. Klimanova, V. I. Serenkov, and N. S. Tikhomirova, "Styrene grafted on polyethylene." B. L. Tsetlin, S. R. Rafikov, L. I. Plotnikova, and P. Ya. Glazunov, "Polyvinyl chloride, polyacrylonitrile, and polymethyl methacrylate grafted on carbon black, MgO, ZnO, and BeO. I. P. Barkalov, A. A. Berlin, V. I. Gol'danskiy, B. G. Dzantiyev, L. M. Kotova, and S. S. Kuz'mina, "Polymerization of acetylene hydrocarbons." Ye. V. Volkova, A. V. Fokin, and V. M. Belikov, "Polymerization of tetrafluoro ethylene by gamma radiation." A. V. Topchiyev, I. A. Lyashenko, N. S. Nametkin, L. S. Polak, M. P. Teterina, A. S. Fel'dman, and T. I. Chernysheva, "Polymerization and copolymerization of allyl silanes." (B) Radiation effects on polymers. V. L. Karpov and Yu. S. Lazurkin, "Problems concerning the stability of polymer materials exposed to nuclear radiation fields." Yu. D. Tsvetkov, Ya. S. Lebedev, and V. V. Voyevodskiy, "Recombination of fluoroalkyl- and peroxide radicals in gamma-irradiated Teflon." A. G. Kiselev, M. A. Mokul'skiy, and Yu. S. Lazurkin, "On epr spectra of oriented, irradiated polyethylene." N. A. Slovokhotova, A. T. Koritskiy, N. Ya. Buben, V. V. Bibikov, and G. V. Rudnaya, "IR spectra of fast-electron irradiated polyethylene." I. M. Barkalov, V. I. Gol'danskiy,

B. G. Dzantiyev, and Ye. V. Yegorov, "A method of welding Teflon and other polymer materials by localizing the effect of radiation on the surface by means of boron compounds." Section 4: V. I. Spitsyn, I. Ye. Mikhaylenko, and V. V. Gromov, "Changes of sorptive properties and rate of isotopic exchange in sulfates after the addition of radioisotopes." V. B. Kazanskiy, G. B. Pariyskiy, and V. V. Voyevodskiy ascertained the presence of atomic hydrogen on the surface of irradiated silica gel by means of epr studies. S. V. Starodubtsev and I. M. Blaunshteyn observed a change in the magnetic properties of BaO and CuCl under the influence of gamma radiation. I. A. Myasnikov reported on preliminary experiments regarding the use of semiconductor probes to determine the concentration of free radicals. S. M. Brekhovskikh, I. D. Tykachinskiy, S. A. Zelentsova, I. V. Vereshchinskiy, A. A. Revina, and A. D. Grishina prepared new types of glass which exhibit no epr spectra after irradiation, and therefore are suitable for epr studies of radicals. It is finally noted that several achievements in the field of radiation chemistry are likely to find industrial application. N. A. Bakh acted as chairman of the organizing committee of the Conference. Three papers were furnished by

Card 7/8

Problems of kinetics and A...

S/195/61/002/001/006/006
B101/B216

the Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR (Institute of Chemical Kinetics and Combustion of the Siberian Branch of the AS USSR).

SUBMITTED: November 16, 1960

Card 8/8

S/020/61/136/001/032/037
B004/B056

AUTHORS: Kolbanovskiy, Yu. A., Polak, L. S., and Shlikhter, E. B.

TITLE: Gamma Radiolysis of n-Heptane Adsorbed on Oxide Catalysts

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1, pp.147-150

TEXT: The purpose of the present work was investigation of the particular features of radiolysis of adsorbed n-alkanes with n-heptane whose homogeneous radiolysis had already been thoroughly investigated (Refs. 1 - 3). Gamma radiolysis the method of which had already been described (Refs. 6, 7) was performed by means of the following catalysts. I: Pure Al_2O_3; II: aluminum-chromium catalyst, promoted with potassium oxide, 90 % Al_2O_3, 8 % Cr_2O_3, 2 % K_2O; III: aluminum-molybdenum catalyst, 87 % Al_2O_3, 10 % MoO_3, 3 % basic sulfates; IV: cobalt-aluminum-molybdenum catalyst, 79 % Al_2O_3, 15.5 % MoO_3, 5.5 % CoO. Radiolysis at catalyst II was investigated in the case of rare surface occupation ($\theta \leqslant 1$) as well as in

Card 1/5

the case of adsorption of several molecular layers. The other catalysts were investigated with monomolecular surface coating ($\theta = 1$). Temperature during the experiment was about 10°C in which case heptane adsorption is reversible and chemosorption does not occur. Fig. 1 shows for catalyst II the increase ΔP in gas pressure with respect to 1 g heptane as depending on β, which stands for the ratio of the electron fractions catalyst/heptane. The break in the curve corresponds to the appearance of monomolecular coating; this permits to determine the specific surface of catalysts by means of this curve. If for homogeneous radiolysis ΔP is set equal to unity then the following values of P_{rel} resulted for the catalysts. Catalyst I: 12.7; catalyst II: 2.0; catalyst III: 1.7; catalyst IV: 3.6. The linear dependence of ΔP on β in the case of monomolecular covering proves that energy transfer takes place only in the monomolecular layer. Rate of radiolysis for the layers above is equal to the rate of the homogeneous process. From a paper of the authors (Ref. 6) on epr spectra of catalyst systems it is concluded that the most active catalyst is the one whose epr spectrum during irradiation in the presence of the hydrocarbon changes the least with respect to the spectrum of the irradiated pure catalyst.

Gamma Radiolysis of n-Heptane Adsorbed on Oxide Catalysts

S/020/61/136/001/032/037
B004/B056

The $\Delta P = f(t)$ curve taken by an ЭПП-09 (EPP-09) recorder is not linear in its first section which is attributed to impurities. The latter also are assumed to be responsible that previously irradiated catalysts were considerably less active. The probability of energy transfer from the catalyst to adsorbed substance is estimated on the basis of the following processes. 1) $X_{ads} \overset{w}{\longrightarrow} X^*$ (direct absorption of radiation by adsorbed substance); 2) $X^* \longrightarrow X$ (deactivation processes, except chemical reactions); 3) $X^* \longrightarrow$ products of chemical reactions; 4) catalyst $\overset{w}{\longrightarrow}$ catalyst*; 5) catalyst$^* \longrightarrow$ catalyst; 6) catalyst$^* + X_{ads} \longrightarrow$ catalyst $+ X^*_{ads}$. The rates of these processes are: $W_1 = k_1' I\theta$; $W_2 = k_2[X^*]$; $W_3 = k_3[X^*]$; $W_4 = k_4' I$; $W_5 = k_5[D]$; $W_6 = k_6[D]\theta$. $[D]$ denotes the concentration of elementary excitations in the solid, I - radiative intensity. The following is deduced: $W_3 = k_3 I\theta/(k_2 + k_3)[k_1' + k_4' k_6/(k_5 + k_6\theta)]$ and for homogeneous radiolysis: $W_3' = k_1' k_3 I/(k_2 + k_3)$. In the case of $\theta = 1$, $W_3/W_3' = 1 + 1/(\varepsilon k_1/k_4)(k_5/k_6 + 1)$ holds, where ε stands for the ratio of absorbed radiation energy per 1 cm^3

Card 3/5

Gamma Radiolysis of n-Heptane Adsorbed on Oxide Catalysts

S/020/61/136/001/032/037
B004/B056

heptane and catalyst. W_3/W_3' was determined experimentally; t was calculated according to Ref. 12, $k_1/k_4 \cong 1$. From these data the authors estimated the probability Z of total energy transfer: $Z = k_6/(k_5 + k_6)$. The values of Z for the respective catalysts are: I: 0.41, II: 0.032, III: 0.026, IV: 0.073. L. V. Pisarzhevskiy and A. I. Kitaygorodskiy are mentioned in the paper. The authors thank V. V. Shchekin and A. L. Klyachko for their collaboration, and Yu. L. Khait for his discussion. There are 2 figures, 2 tables, and 12 references: 6 Soviet, 4 US, and 1 Polish.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

PRESENTED: July 5, 1960 by A. V. Topchiyev, Academician

SUBMITTED: July 5, 1960

Card 4/5

27256
S/020/61/139/005/006/021
B104/B201

5.4600

AUTHORS: Brodskiy, A. M., and Kolbanovskiy, Yu. A.

TITLE: Inhibition of radiolysis

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 5, 1961, 1081-1084

TEXT: A study has been made of inhibition effects of the radiolysis of organic systems by small admixtures of impurities. These effects can be regarded as a consequence of the direct transmission of an excitation to the impurity molecules. On the basis of Fig. 1, where a molecule excited by irradiation is indicated by II, and a molecule of the inhibitor is indicated by I, the following relation is obtained for the matrix element of the effective excitation energy which corresponds to a transition of II to the ground state and to a photon-induced excitation of I without emission:

$$U_{i\to f} = \int (j_{\alpha II}(\vec{r}_{II}))_{fi} \frac{e^{i\omega(|\vec{r}_I - \vec{r}_{II}|)}}{|\vec{r}_I - \vec{r}_{II}|} (j_{\alpha I}(\vec{r}_I))_{fi} (dr_I)\,(dr_{II}) \qquad (3)$$

Card 1/5

Inhibition of radiolysis

This integral is integrated over the entire space; $(j_{\alpha i})_{fi}$ (i=I,II) are the matrix elements of the flow vector corresponding to the transitions investigated here and differing from zero in the regions I and II. Using results of other authors (D. R. Kalkwarf, Nucleonics, 18, no. 5, 76 (1960); Yu. A. Kolbanovskiy et al., Tezisy dokl. na II Vsesoyuzn. soveshch. po radiatsion. khim., M., 1960; A. I. Akhiyezer et al., Kvantovaya elektrodinamika, 1953), the equation

$$U_{i\to f} = \frac{\omega^2 e^{i\omega R}}{R}\left\{1 - \frac{2}{i\omega R} + \frac{3}{2(i\omega R)^2}\right\}(D_{Io})_{fi}(D_{IIo})_{fi}$$ is obtained. It follows that the probability of a process investigated here per unit time reads:

$$W_{if} = \int 2\pi |U_{i\to f}|^2 \delta(E_{fI}-\omega)\rho(E_{fI})dE_{fI}$$

$$= \frac{2\pi\omega^4}{R^2}\left(1+\frac{1}{(\omega R)^2}+\frac{9}{4(\omega R)^4}\right)\rho(\omega)(D_{Io})^2_{fi}(D_{IIo})^2_{fi} \qquad (14)$$

the energy of the ground state E_{iI} of the inhibitor being put equal to

Card 2/5

Inhibition of radiolysis

zero. To estimate W_{if} it is suitable to express (14) by the probabilities W_I and W_{II} for dipole radiation of the excited molecules I and II. The ratio W_{if}/W_I is found to remain sufficiently high if the level density $\rho(\omega)$ is high, and W_{II} is small. In addition, the rate of radiolysis inhibition as a function of the inhibitor concentration is studied. The following relation is obtained for the mean probability of inhibition in the medium: $W = \int_{R_1}^{R_2} W_{if}(\vec{R}) c_i(d\vec{R}) = AC_i^{2/3}(1+\alpha_1 C_i^{2/3}/\omega^2 + \alpha_2 C_i^{4/3}/\omega^4)$.

C_i is the inhibitor concentration, and A is independent of it; α_1 and α_2 are numerical coefficients of the order of unity. A comparison with experimental results of other authors (S. Lipsky et al., Rad. Res., 8, 203 (1958)) shows this relation to give a correct description of the course of radiolysis inhibition in a wide range of variation of C_i, which contains the so-called saturation range. V. G. Levich and L. S. Polak are thanked for having participated in discussions. There are 2

Card 3/5

Inhibition of radiolysis

figures and 9 references: 3 Soviet and 6 non-Soviet. The references to English-language publications read as follows: S. Lipskiy, M. Burton, J. Chem. Phys., 26, 1337 (1957); T. J. Hardwick, J. Chem. Phys., 65, 101 (1961); G. R. Frieman, Canad. J. Chem., 38, 1043 (1960); Nuclear Eng., 5, no. 47, 59 (1960).

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences, USSR)

PRESENTED: March 29, 1961, by V. N. Kondrat'yev, Academician

SUBMITTED: March 23, 1961

Card 4/5

5.4600 1274

33103
S/638/61/001/000/028/056
B116/B102

AUTHORS: Kolbanovskiy, Yu. A., Kustanovich, I. M., Polak, L. S., Shcherbakova, A. S.

TITLE: Effect of gamma radiation on oxide catalysts and on systems consisting of a catalyst and adsorbed hydrocarbon

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 191-192

TEXT: The authors studied the epr spectra of a series of catalysts before and after irradiation with ~1.25-Mev Co^{60} γ-quanta. They attempted to find out whether carriers of unpaired-electrons exist in the polycrystalline samples. They also studied the interaction between hydrocarbon (and/or the radiolysis product) and the catalyst during adsorption. For this purpose they used aluminum oxide, aluminum silicate cracking catalyst, potassium oxide-promoted chromo-alumina catalyst two molybdeno-alumina catalysts, molybdenum disulfide and cobalto-molybdeno alumina catalysts. None of the catalysts except $Cr_2O_3Al_2O_3$ released a

Card 1/2

KOLBANOVSKIY, Yu.A.

54600

31669
S/607/61/003/000/002/002
E075/E185

AUTHORS: Topchiyev, A.V., Lavrovskiy, K.P., Polak, L.S., Brodskiy, A.M., and Kolbanovskiy, Yu.A.

TITLE: Investigation into the radiation chemistry of petroleum hydrocarbons and the application of nuclear irradiation in the petroleum refining industry and petrochemical synthesis

SOURCE: International Petroleum Congress. 5th, New York, 1959 [Doklady] t. 3: Pererabotka nefti i gaza. Neftekhimiya. Moscow, Gostoptekhizdat, 1961, 345-354.

TEXT: Liquid alkanes, mainly n-heptane, were subjected to X-ray radiolysis. It was found that at room temperature the amount of hydrogen, molecular weight and refractive index of the liquid phase increase linearly with the irradiation. The amount of methane increases depending on the proportion of CH_3 groups in the molecule. UV spectra indicate the formation of polymers with conjugated double bonds. The number of such bonds increases with the number of CH_2 groups in the alkane molecules. It was shown that the weight percent of the heavy residue increases

Card 1/4

Investigation into the radiation ...

proportionally with the increasing doses of radiation. The molecular weight of the residue ranges from 175 to 218 and specific gravity 0.76 to 0.80 g/cm^3. The radiolysis of n-heptane at -196 °C (in liquid nitrogen) gave products containing a marked proportion of free radicals as demonstrated by the examination of their paramagnetic spectra. At this low temperature free atoms of hydrogen are present for a considerable time, which opens new perspectives before petrochemical industry. The yield of the products of the recombination of C_7H_{15} radicals at the low temperatures (giving various isomers of tetradecane) is halved compared with the yield obtained at 20 °C. The yield of the products obtainable by monomolecular reactions as well as the probability of transmission of the activation energy to other molecules decreases with temperature. In the case of catone UV absorption on irradiation at -79° and -196 °C is 4 times higher than that of catone treated at room temperature which indicated a rapid increase in the formation of dienes. The formation of polymers is slower. For the small doses of radiation a direct proportionality between the yields of gases and time of

Investigation into the radiation ... S/607/61/003/000/002/002
E075/E185

irradiation was observed. The addition of dibenzylsulphide to the alkanes prevented their radiolysis to a large extent. In the gaseous products of the radiolysis of the solution there is no H_2S, which suggests that a transmission of activation takes place. It was found that an important role during the irradiation of the alkanes is played by the process of direct rupture of carbon-carbon bond leading to the formation of alkyl radicals and final products (odd- and even-numbered carbon hydrocarbons). A study of the radiation and thermal stability of aromatic hydrocarbons was conducted by subjecting them to nuclear reactor irradiation at high temperatures. At the same time the thermal stability was controlled at 400 °C. It was shown that the thermal stability at 400 °C and radiation stability at 330 °C and irradiation dose of 1500 microrads are approximately the same. The introduction of methyl groups into the aromatic system leads to a marked decrease in the radiation stability. An increase of irradiation temperature from 220 to 330 °C accelerates the decomposition.

Card 3/4

There are 6 figures, 5 tables and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The English language references read as follows:

Ref.6: G.A. Freund, Nucleon, v.14, no.8, 62, 1956;
L.W. Fromm, K. Anderson. Nucl. Sci. Eng., 2(1), 160, 1956;
Colichman, E.L., Fish, R.F. Nucleon. v.15, no.2, 72, 1957;
E.L. Colichman, R.H. Gercke. Nucleon. v.14, no.7, 50, 1956.

Ref.7: R.O. Bolt, S.G. Carroll. Proceedings of the International Conference on Peaceful Uses of Atomic Energy, Geneva, v.7, 8-20, 1955. United Nations, c. 550. N.Y., 1956.

BRODSKIY, A.M.; KOLBANOVSKIY, Yu.A.

Mechanism of the inhibition of radiolysis. Dokl. AN SSSR 139 no.5:1081-1084 Ag '61. (MIRA 14:8)

1. Institut neftekhimicheskogo sinteza AN SSSR. Predstavleno akademikom V.N. Kondrat'yevym.
(Chemistry, Organic) (Molecular dynamics)

35421

S/081/62/000/004/005/087
B149/B101

5.4600

AUTHORS: Kolbanovsky Yu. A., Kustanovich I. M., Polak L. S. Shcherbakova, A. S.

TITLE: The action of gamma radiation on oxide catalysts and on catalyst-adsorbed hydrocarbon systems

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 68-69, abstract 4B479 (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii, v. 1, 1959. Tashkent, AN UzSSR, 1961, 191-192)

TEXT: The spectra of electron paramagnetic resonance (epr) of the following catalysts were studied before and after irradiation with ~1.25 Mev γ-quanta: Al_2O_3; aluminosilicate for cracking; alumino-molybdenum; K_2O-activated alumino-chromium; MoS_2 and cobaltic alumino-molybdenum. The epr spectra of irradiated catalyst-hydrocarbon systems were also investigated. An epr signal was obtained before irradiation in the case of alumino-chromium catalyst. All the other catalysts except MoS_2, gave

Card 1/2

KOLBANOVSKIY, Yu. A.

SESSION B—6—2 : Radiation Chemistry in Two-Phase Systems

(a)

Radiolysis of Hydrocarbons Absorbed on Semi-Conductor Catalysts

A. V. Topchiev, L. S. Polak and Yu. A. Kolbanovskii

3

Homogeneous and heterogeneous catalysts are agents which contribute to the increase of rates and which enhance the selectivity of radiation-chemical processes. In the presence of catalysts it is possible to increase the effectiveness of utilization of a given radiation, and simultaneously to increase the degree of product conversion. The conditions of energy transfer from the volume of the solid catalyst to the absorbed substance determine the reaction rate on the surface. The lack of increased rates outside the monolayer points to the specific nature of surface reactions and to the unimportant role of photoelectrons in the reaction.

The relative activity of a number of oxide catalysts was determined on the basis of the formal kinetic scheme for the calculation of the probability of the energy transfer in radiation-chemical processes in the absorbed state. When the radiation-chemical process is carried out in the presence of commercial catalysts, one obtains a 5-10-fold increase of the gas product yield in the radiolysis of alkanes.

An attempt has been made to calculate, on the basis of an activation model, the fundamental rules of the radiolysis of hydrocarbons absorbed on semi-conductor catalysts; the results of the calculations agree qualitatively with the experimental results.

Radiochemical Laboratory of the Institute for Synthesis of Hydrocarbons Academy of Sciences of the USSR, Moscow

report presented at the 2nd Intl. Congress of Radiation Research,
Harrogate/Yorkshire, Gt. Brit., 5-11 Aug 1962

S/204/62/002/001/005/007
I032/I232

5.4600

AUTHORS: Brodskiy, A. M., Kolbanovskiy, Yu. A., Polak, L. S.

TITLE: On energy transfer during radiolysis of hydrocarbons

PERIODICAL: Neftekhimiya, v. 2, no. 1, 1962, 54-67

TEXT: This is a theoretical treatment of previous experimental work on inhibition of radiolysis of non-polar, non-associated organic compounds in the liquid phase by the admixture of small amounts (10^{-2} to 10^{-5} mole/l) of inhibitors, usually aromatic compounds or iodine. A model for the inhibition mechanism is proposed, based on electromagnetic interaction between the excited molecules of the substance subjected to radiolysis (energy donor) and the molecules of the inhibitor (energy acceptor). A relationship between the inhibition probability and the concentration of the inhibitor is derived, according to which the former is proportional to the 2/3-th power of the latter. This relationship is valid for inhibitor concentrations lower than 10^{-2} mole/l. The relationship between the inhibition effect and the character of the excitation spectra of the molecules involved is considered. There are 9 figures.

/B

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AS USSR)

SUBMITTED: November 20, 1961

Card 1/1

KOLBANOVSKIY, YU. A.

PHASE I BOOK EXPLOITATION SOV/6177

Akademiya nauk SSSR. Institut neftekhimicheskogo sinteza

Radioliz uglevodorodov; nekotoryye fiziko-khimicheskiye problemy (Radiolysis of Hydrocarbons; Some Physicochemical Problems) Moscow, Izd-vo AN SSSR, 1962. 207 p. Errata slip inserted. 5000 copies printed.

Resp. Eds.: A. V. Topchiyev, Academician, and L. S. Polak, Doctor of Physics and Mathematics; Ed.: L. T. Bugayenko; Tech Ed.: Ch. A. Zentsel'skaya.

PURPOSE: This book is intended for physical and industrial chemists interested in the properties and behavior of irradiated hydrocarbons.

COVERAGE: The book gives a systematic presentation of the results of research on the radiolysis of hydrocarbons carried out from 1957 through 1961 at the Laboratory of Radiation Chemistry, Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petro-

Card 1/4

chemical Synthesis, Academy of Sciences USSR). Although the results were obtained for individual compounds, they may be generalized and applied to other members of the same homologous series. The following persons participated in making the experiments and in writing the text: V. G. Beryezkin, V. E. Glushnev, Yu. A. Kolbanovskiy, I. M. Kustanovich, V. D. Popov, A. Ya. Temkin, V. D. Timofeyev, N. Ya. Chernyak, V. A. Shakhray, E. B. Shlikhter, A. S. Shcherbakova, B. M. Negodov, A. Z. Peryshkina, N. M. Rytova, T. A. Tegina, Yu. B. Emin, A. M. Brodskiy, V. V. Voyevodskiy, P. Ya. Glazunov, B. A. Smirnova, and Yu. L. Khait. References, mainly Soviet and English, follow individual chapters.

TABLE OF CONTENTS [Abridged]:

Radiolysis of Hydrocarbons (Cont.) SOV/6177

Card 3/4

Radiolysis of Hydrocarbons (Cont.) SOV/6177

Ch. VII. Radiation-Thermal Cracking of Hydrocarbons 185

AVAILABLE: Library of Congress

SUBJECT: Oil and Gas Industries

Card 4/4

BN/clb/tem
1-18-63

S/844/62/000/000/053/129
D204/D307

AUTHORS: Kolbanovskiy, Yu. A., Polak, L. S. and Shlikhter, E. B.

TITLE: A study of the radiolysis of hydrocarbons adsorbed on oxide hydrocarbons

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 317-321

TEXT: The radiolysis kinetics of n-heptane were studied, on oxide catalysts (Al_2O_3, Al_2O_3/Cr_2O_3 activated with K_2O, Al-Mo oxides and Co-Al-Mo oxides), under x ray irradiation; the degree of catalyst coverage (θ) being 0.6, 1.0 or >1 (multilayer adsorption) for the Al_2O_3-Cr_2O_3 catalyst, and with $\theta = 1$ in all other cases. The pressure was recorded continuously and its rate of increase rose linearly (for the Cr_2O_3/Al_2O_3 catalyst) with increasing ratio of the electron fractions of catalyst/heptane, to a maximum (corresponding to the completion of a monolayer), followed by a linear decrease,

Card 1/3

A study of the ... S/844/62/000/000/053/129
D204/D307

showing that the energy absorbed by the catalyst is transmitted solely into the monolayer. The relative rates of radiolysis, Δp_{rel}, ranged from 1.7 to 12.7 ($\Delta p = 1$ in the absence of catalyst), being lower for previously irradiated catalysts. Al_2O_3 was most effective. From these and previous results (DAN SSSR, 129, 145 (1959)) it appears that the lesser the difference between the EPR spectra of irradiated (and covered with a monolayer) and pure catalysts, the more effective the catalyst. It is believed that the adsorption is under these conditions intermediate between physical and chemical types. The following sequence of events is envisaged: (1) absorption of energy by the directly adsorbed compound, (2) deactivation processes (other than chemical reaction), (3) chemical reaction, (4) absorption of energy by the catalyst, (5) energy loss processes within the catalyst, and (6) transfer of energy from the catalyst to the adsorbed hydrocarbons; the corresponding rate constants are denoted by $k_1, \ldots, k_6$. The probability of step (6), Z is shown to be $\frac{k_6}{k_5+k_6}$, and is linearly related to Δp_{rel}. The rela-

Card 2/3

A study of the ...

S/844/62/000/000/053/129
D204/D307

tive activity of the catalysts studied is thus determined by Z. There are 2 figures and 2 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AS USSR)

Card 3/3

S/844/62/000/000/124/129
D444/D307

AUTHORS: Glazunov, P. Ya., Kolbanovskiy, Yu. A. and Timofeyev, V.D.

TITLE: Flow installation for investigation of radiation-chemical reactions

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 725-728

TEXT: The installation was designed for carrying out radiation-chemical reactions under flow conditions with the object of studying the kinetics and of modelling certain gas-phase radiation-chemical processes. It consists essentially of a stainless-steel, externally heated reactor of 50 mm internal diameter and 1 m long, provided at the window end with an inlet and a manometer with television observation. The inlet communicates with a pumping and dispensing system, which can, however, be made closed circuit for the pre-adjustment of flow and pressure. On leaving the reactor, the vapor passes to a water-cooled collecting train while the gas leaves

Card 1/2

via a gas meter. The whole installation is mounted on a platform which is moved on rails and hydraulically lifted into the correct position with respect to the window of an electron beam accelerator. The readings of the thermocouples in the reactor are corrected for their heating by the radiation beam. Either aluminum of beryllium foil windows can be used in the reactor. In spite of some defects, the installation has been successfully used for studies of radiation-thermal cracking of liquid hydrocarbons and petroleum fractions. There are 5 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR; Institut fizicheskoi khimii AN SSSR (Institute of Petrochemical Synthesis, AS USSR; Institute of Physical Chemistry, AS USSR)

43223
S/844/62/000/000/008/129
D290/D307

5.4611

AUTHORS: Kolbanovskiy, Yu. A. and Polak, L. S.

TITLE: The transfer of excitation in intramolecular radiolytic reactions

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 64-69

TEXT: Various methods of energy transfer connected with inhibition of radiolytic reactions in nonpolar liquid are considered. A system of equations is proposed for the inhibition of radiolytic reactions, showing that

$$\frac{1}{G} \sim C_u^{n/3}, \quad \text{and} \quad C_u^{n/3} = \frac{1}{r^n}$$

Card 1/2

The transfer of ...

where G is the rate of disappearance of the initial substance in the presence of the inhibitor, C_u is the inhibitor concentration, r is the interaction distance of the inhibition process, and n is an integer. The authors used published experimental results to show that n = 2 for the radiolysis of many hydrocarbons; this result cannot be explained by various suggested inhibition mechanisms. Iodine can act as an acceptor of excitation energy as well as an acceptor of free radicals; many earlier conclusions should, therefore, be reconsidered. There are 4 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AS USSR)

Card 2/2

BRODSKIY, A.M.; KOLBANOVSKIY, Yu.A.; POLAK, L.S.

Energy transfer in the radiolysis of hydrocarbons. Neftekhimia 2 no.1:54-67 Ja-F '62. (MIRA 15:5)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Hydrocarbons) (Radiochemistry)

TOPCHIYEV, A.V.; KOLBANOVSKIY, Yu.A.; POLAK, L.S.; KHAIT, Yu.L.; SHLIKHTER, E.B.

Radiolysis of alkanes adsorbed on semiconductor catalysts. Neftekhimiia 1 no.1:105-116 Ja-F '61. (MIRA 15:2)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Paraffins) (Radiation) (Catalysts)

S/204/63/003/001/010/013
E075/E436

AUTHORS: Kolbanovskiy, Yu.A., Pepelyayev, Yu.V., Polak, L.S.

TITLE: The influence of temperature on the radiolysis of n-heptane adsorbed on Al_2O_3

PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 124-127

TEXT: The aim of the work was to investigate the effect of temperature on γ-radiolysis of n-heptane adsorbed on γ-Al_2O_3. The catalyst was activated at 500°C and pressure of 10^{-4} mm Hg for 10 hours. A monolayer of n-heptane adsorbed on Al_2O_3 was irradiated (doses of 2.4×10^{16} eV/cm3 sec in the temperature range 20 to 350°C. Compared with the results of the irradiation in a homogeneous system, the heterogeneous process is characterized by the absence of unsaturated hydrocarbons in the products. This may be due to irreversible adsorption of such hydrocarbons on Al_2O_3 surface. The decomposition of n-heptane at temperatures above 150°C is a chain process. At 350°C the decomposition yield is about 300 molecules/100 eV and the total activation energy is 14.5 ± 1.5 kcal/mol. As the activation energy for the homogeneous decomposition is about 20 kcal/mol, the difference is probably caused by the heat of adsorption of the

Card 1/2

radicals. The life of radicals on the irradiated Al_2O_3 surface at 150°C is about 10^{-6} sec. There are 1 figure and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR
(Institute of Petrochemical Synthesis AS USSR)

SUBMITTED: July 9, 1962

KOLBANOVSKIY, Yu.A.; POLAK, L.S.; SHLIKHTER, E.B.

Radiation polymerization of n.heptene in the presence of $TiCl_4$.
Neftekhimiia 3 no.2:222-226 Mr-Ap '63. (MIRA 16:5)

1. Institut neftekhimicheskogo sinteza AN SSSR imeni A.V.Topchiyeva.
(Heptene) (Radiation) (Polymerization)

ACCESSION NR: AP4010061 S/0021/64/000/001/0082/0084

AUTHOR: Guty*rya, V. S. (Academician); Kachan, O. O.; Kolbanovs'ky*y, Yu. A.; Polak, L. S.; Nizel's'ky*y, Yu. M.; Frolova, V. S.

TITLE: Radiolysis of cyclohexane adsorbed by synthetic zeolites

SOURCE: AN UkrRSR. Dopovidi, no. 1, 1964, 82-84

TOPIC TAGS: radiation chemistry, radiolysis cation-exchanger, molecular sieve, zeolite, synthetic zeolite, type X molecular sieve

ABSTRACT: The present work was done to determine the influence of the chemical composition of the adsorbents on the composition of the radiolytic products of cyclohexane. Synthetic zeolites (commercial CoX, NaX, NaCaX and NaNiX) were used to adsorb cyclohexane, which was irradiated with Co^{60} gamma-radiation. The radiolytic products were analyzed by gas chromatography. The results indicate that the presence of two cations in the zeolite, one of them of variable valence, is important for the formation of an adsorbent actively affecting radiolysis. Orig. art. has 2 figures and 1 table.

Card 1/2

ACCESSION NR: AP4010061

ASSOCIATION: Insty*tut khimiyi polimeriv i monomeriv AN UkrRSR (Institute of the Chemistry of Polymers and Monomers, AN UkrRSR); Insty*tut naftokhimichnogo sy*ntezu AN SRSR (Institute of Petrochemical Synthesis, AN SRSR [Ukrainian equivalent of SSSR])

SUBMITTED: 20Jun63 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: CH, NS NO REF SOV: 001 OTHER: 003

Card 2/2

BRODSKIY, A.M.; KOLBANOVSKIY, Yu.A.; POLAK, L.S.

Concerning the remarks on articles by IU.A. Kolbanovskii, A.M. Brodskii, L.S. Polak on the mechanism of sedtolysis inhibition. Kin. i kat. 5 no.2:360-364 Mr-Ap '64. (MIRA 17:8)

1. Institut neftekhimicheskogo sinteza AN SSSR imeni A.V. Topchiyeva.

L 58478-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(c)/EWA(l) Pc-4/Pr-4/Peb RM
ACCESSION NR: AP5015241 UR/0286/65/000/009/0023/0023
541.15:547.313.2

AUTHOR: Glushnev, V. Ye.; Kolbanovskiy, Yu. A.; Fatalakh, I. I.; Polak, L. S.; Popov, V. T.; Shakhray, V. A.

TITLE: Radiation-induced synthesis of organic compounds with various functional groups. Class 12, No. 170503

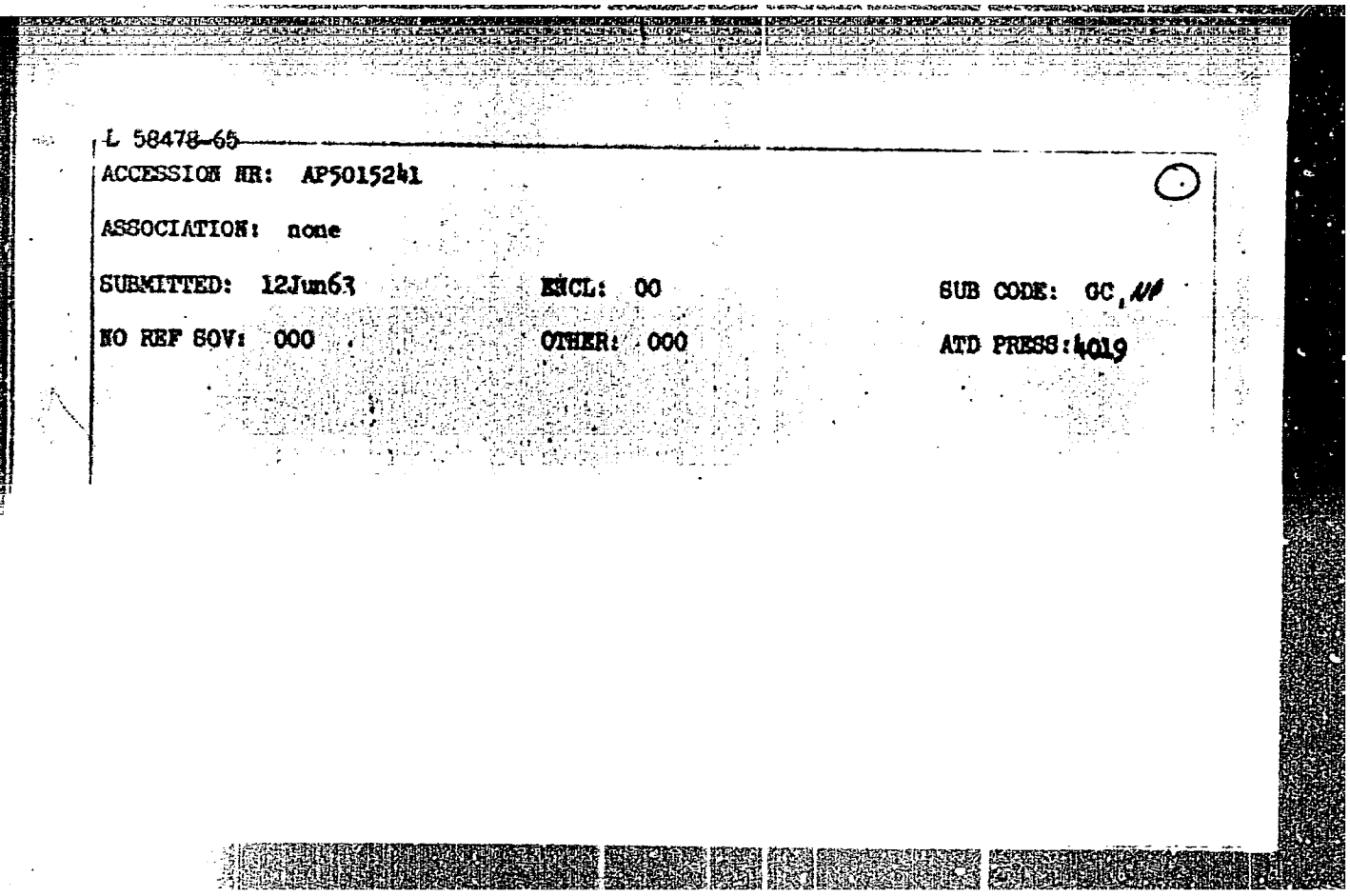
SOURCE: Byulleten' izobreteniy i tovarnykh znakov no. 9, 1965, 23

TOPIC TAGS: radiation, radiation induced synthesis

ABSTRACT: An Author Certificate has been issued for a radiation-induced synthesis of organic compounds having various functional groups, such as carboxylic acids, amines, nitro and nitroso compounds, thio compounds, alcohols, etc. The method consists in the ionizing irradiation of a reaction mixture comprising a monomer, such as ethylene, and a reactant, such as CO_2, NH_3, NO_2, NO, H_2S, SO_2, H_2O, etc., which determines the type of the derivative formed. [illegible] a compound having the desired molecular weight, the reaction mixture is heated in the presence of a catalyst, e.g. aluminum oxide or silica gel.

[SM]

Card 1/2



L 58478-65

ACCESSION NR: AP5015241

ASSOCIATION: none

SUBMITTED: 12Jun63	ENCL: 00	SUB CODE: GC, NP
NO REF SOV: 000	OTHER: 000	ATD PRESS: 4019

L 15193-66 EWT(m)/EWP(t)/EWA(l)/EWA(h) DIAAP RM/GS
ACC NR: AT5023437 SOURCE CODE: UR/0000/65/000/000/0113/0117

AUTHOR: Brodskiy, A. M.; Kolbanovskiy, Yu. A.; Polak, L. S. 66

ORG: none

TITLE: Energy transfer during radiolysis of hydrocarbons 19,5544 B+1

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy, Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 113-117

TOPIC TAGS: radiation effect, excited state, electron energy, excited electron state, HYDROCARBON

ABSTRACT: The effect of inhibition (by aromatic molecules, molecules of iodine, etc.) on electron excitation energy transfer during radiolysis of hydrocarbons at low and medium temperatures was studied. For highly excited states with a relaxation time of the order of 10^{-13}-10^{-14}, the probability (in vacuum) of energy transfer from the excit-

Card 1/3

L 15193-66
ACC NR: AT5023437

ed molecules to the molecules of the inhibitor by the dipole-dipole mechanism is

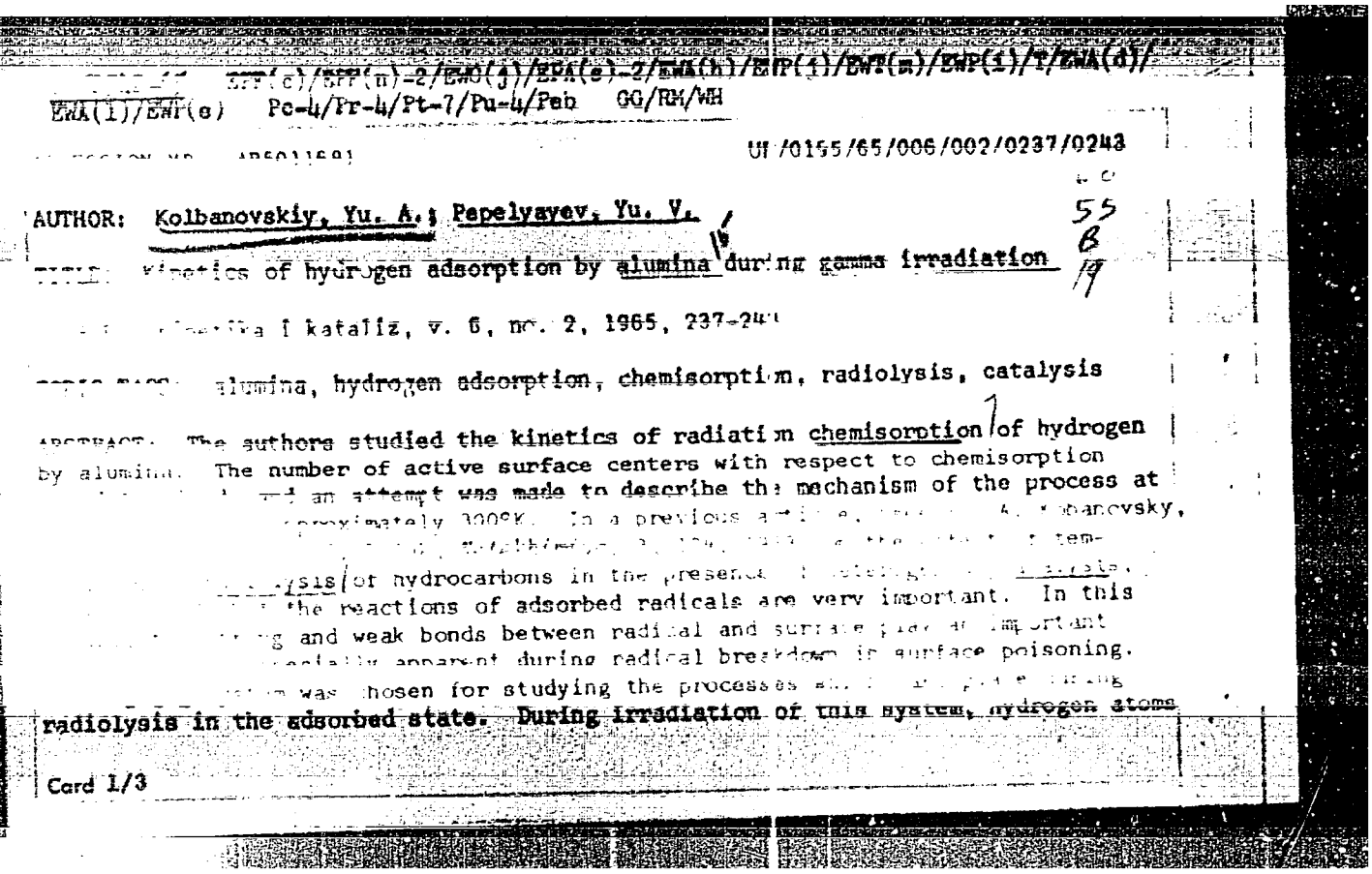
$$\omega_{II} = \frac{\pi^2}{2^7 \cdot 3} \alpha^2 \left(1 + \alpha^2 + \frac{9}{4}\alpha^4\right) \rho(\omega) \omega_I \omega_{II},$$

where ω_I and ω_{II} are probabilities of dipole generation by excited molecules and molecules of the inhibitor, respectively, $\rho(\omega)$ is density distribution in the ultimate state of the inhibitor molecules, α is a dimensionless parameter. In many cases, the excitation level of a chemically active molecular system, particularly ions, is below the first excitation level of most molecules in the reacting system. In the case of strong absorption by the molecules of the inhibitor, the dependence of the probability of inhibition ω upon concentration is

$$\omega = A\rho^{2/3}\left(1 + \beta_1 \frac{(Bc)^2 \rho^{2/3}}{\omega^2} + \beta_2 \frac{(Bc)^4 \rho^{4/3}}{\omega^4}\right),$$

where β_1 and β_2 are constants depending upon the intensity of molecular interaction; their values are close to unity. The equation des-

Card 2/3



EWA(1)/EWT(e) Pc-4/Pr-4/Pt-7/Pu-4/Peb GG/RM/WH

UR/0155/65/006/002/0237/0243

AUTHOR: Kolbanovskiy, Yu. A.; Pepelyayev, Yu. V.

TITLE: Kinetics of hydrogen adsorption by alumina during gamma irradiation

SOURCE: Kinetika i kataliz, v. 6, no. 2, 1965, 237-241

TOPIC TAGS: alumina, hydrogen adsorption, chemisorption, radiolysis, catalysis

ABSTRACT: The authors studied the kinetics of radiation chemisorption of hydrogen by alumina. The number of active surface centers with respect to chemisorption [illegible] an attempt was made to describe the mechanism of the process at approximately 300°K. In a previous article, [illegible] A. Kolbanovsky, [illegible] tem- [illegible]lysis of hydrocarbons in the presence [illegible] catalysis, [illegible] the reactions of adsorbed radicals are very important. In this [illegible]g and weak bonds between radical and surface play an important [illegible] apparent during radical breakdown in surface poisoning. [illegible] was chosen for studying the processes [illegible] radiolysis in the adsorbed state. During irradiation of this system, hydrogen atoms

Card 1/3

L 52342-65

ACCESSION NR: AP5011681

are formed which may either recombine or "adhere" to the surface. It is experimentally shown that a heterogenous process takes place and that even a partial reduction cannot be explained by generation of hydrogen atoms in the gaseous phase which then adhere to the surface. An equation is derived for the rate of radiation chemisorption

$$-\frac{dP}{d\tau} = KIP^{1/2}S\alpha(1-\theta),$$

where α is the number of adsorption centers per square centimeter of surface; θ is the fraction of occupied adsorption centers. Since a closed system was studied, the concentration and number of molecules in the gaseous phase is easily determined from the pressure $\left(n = \frac{PV}{kT}\right)$, this equation may be written in the form

$$-\frac{dn}{d\tau} = k'In^{1/2}V^{1/2}S\alpha(1-\theta),$$

where $k' = K/\sqrt{kT}$; n is the number of molecules in the gaseous phase at time τ. If it is assumed that the number of occupied centers through the surface is equal to the number of molecules leaving the gaseous phase, i.e., $S\alpha\theta = 2(n_0 - n)$, this [illegible] to be the one which correctly describes the experimentally ob-

Card 2/3

L 52342-65

ACCESSION NR: AP5011681

5

served process of radiation chemisorption. The absorption centers are apparently [illegible] defects in the Al_2O_3 lattice. Activation analysis showed that the [illegible] in the experiments contains less than 0.[illegible]0 wt % of atomic iron. Even [illegible] assume that all the iron impurity atoms [illegible] are located on the surface, the concentration comes to 5×10^{10} atoms cm^2 which is lower by two orders of magnitude than the number of experimentally observed centers, the number [illegible] refers being dependent on the preliminary treatment of the catalyst.

[illegible] dedicated to L. S. Polak for proposing the theme for study, and to [illegible] L. I. Leypunskaya for activation analysis [illegible]

Orig. art. has: 5 figures, 1 table and 9 formulas.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Petroleum Chemistry Synthesis Institute, AN SSSR)

SUBMITTED: 04Apr63 ENCL: 00 SUB CODE: GC, NP

NO REF SOV: 006 OTHER: 007

Card 3/3 [illegible]

DOLIDZE, G.M.; KOLBANOVSKIY, Yu.A.; POLAK, L.S.

Chemisorption of hydrogen on γ-Al_2O_3. Kin. i kat. 6 no.5:897-903 S-O '65. (MIRA 18:11)

1. Institut fiziki AN Gruzinskoy SSR i Institut neftekhimicheskogo sinteza imeni Topchiyeva AN SSSR.

DOLIDZE, G.M.; KIRTADZE, M.G.; KOLBANOVSKIY, Yu.A.; LUK'YANOV, A.T.; POLAK, L.S.; PUSTYL'NIKOV, L.M.; TSERETKHLADZE, T.V.

Kinetics of radiation-induced isotope exchange of deuterium with hydroxyl groups of silica gel. Kin. i kat. 6 no. 6: 1003-1009 N-D '65 (MIRA 19:1)

1. Institut fiziki AN Gruzinskoy SSR; Institut neftekhimicheskogo sinteza AN SSSR imeni Topchiyeva i Kazakhskiy gosudarstvennyy universitet imeni Kirova. Submitted April 24, 1965.

L 29538-66 EWT(m)/EWP(j)/T IJP(o) WW/GG/RM

ACC NR: AP6007777 SOURCE CODE: UR/0195/66/007/001/0187/0187

AUTHOR: Berezkin, V. G.; Kolbanovskiy, Yu. A.; Kyazimov, E. A.

ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Kinetics of radiation polymerization of acrylonitrile from the gas phase on a mineral substrate

SOURCE: Kinetika i kataliz, v. 7, no. 1, 1966, 187

TOPIC TAGS: acrylonitrile, radiation polymerization, absorption

ABSTRACT: The kinetics of graft polymerization of acrylonitrile initiated with Co^{60} gamma radiation was studied. The reaction was conducted with a view to modifying the properties of INZ-600 brick which is widely used as a carrier in gas-liquid chromatography. A powdered form of this material in a glass ampoule was subjected to heat treatment at 300° and a pressure of 10^{-2} mm Hg for 3-4 hr; a second ampoule containing the degassed monomer was connected to the first ampoule so that during the irradiation the powder was in acrylonitrile vapor (the liquid acrylonitrile was

Card 1/2 UDC: 541.124 + 542.952.6 + 541.15

L 29538-66

ACC NR: AP6007777

shielded from the radiation with lead). The weight of polymer formed was measured as a function of irradiation time. The kinetics of the process are adequately described by the Roginskiy-Zel'dovich equation for adsorption on an inhomogeneous surface

$$\frac{dq}{dt} = ae^{-bq} \quad \text{or} \quad q = \frac{1}{b}[\ln(t + t_0) - \ln t_0], \qquad (1)$$

where

$$t_0 = \frac{1}{ab}.$$

From the data obtained it is concluded that the surface which actually takes part in the grafting process is inhomogeneous. Orig. art. has: 1 figure and 1 formula.

SUB CODE: 07/ SUBM DATE: 26May65/ ORIG REF: 000/ OTH REF: 001

Card 2/2

L 10340-67 EWT(m)/EWP(t)/ETI IJP(c) GG/RM/GD

ACC NR: AP6028027 SOURCE CODE: UR/0251/66/042/001/0051/0056

AUTHORS: Dolidze, G. M.; Kolbanovskiy, Yu. A.; Polak, L. S.

ORG: Academy of Sciences, Georgian SSR, Institute of Physics, Tbilisi (Akademiya nauk Gruzinskoy SSR, Institut fiziki); Academy of Sciences SSSR, Institute of Petroleum-Chemical Synthesis, imeni A. V. Topchiyev (Akademiya nauk SSSR, Institut neftekhimicheskogo sinteza)

TITLE: A kinetic investigation of hydrogen adsorption on γ-Al_2O_3 when acted on by gamma rays

SOURCE: AN GruzSSR. Soobschcheniya, v. 42, no. 1, 1966, 51-56

TOPIC TAGS: gas adsorption, gamma irradiation, kinetic equation

ABSTRACT: Specimens of Al_2O_3 were prepared and irradiated by a method similar to that previously described in several papers. During the experiment, the specimen of Al_2O_3 was separated from a hydrogen source by a glass partition. At the proper moment, the partition was removed and the adsorption was measured. During radiation of the Al_2O_3, adsorption centers with substantially different lifetimes were created. These adsorption centers have substantially different activities, indicating inhomogeneity of the Al_2O_3 surface during radiation chemosorption. The formula previously used to describe the kinetics of adsorption is valid only for a homogeneous

Card 1/2

L 10348-67
ACC NR: AP6028027

surface. The authors therefore suggest a new equation, $W = KJ\sqrt{n}\, S\alpha(1-\bar{\theta})$, where W is the rate of chemosorption, n the number of molecules in the gas phase, K the constant of adsorption rate, J the radiation dosage, S the surface of the adsorbent, α the number of potential adsorption centers per unit surface, and θ the part occupied by the adsorption centers. The principal difference between this and the previous equation is the use of the mean value of θ in the present equation rather than the true value. The two values are similar if the more active adsorption centers outnumber the less active centers at the time of irradiation. When $\theta > 0.8$ this condition will not be fulfilled. This paper was presented by Academician E. L. Andronikashvili on 25 January 1966. Orig. art. has: 4 figures and 7 formulas.

SUB CODE: 11/ SUBM DATE: 25Jan66/ ORIG REF: 005/ OTH REF: 001

Card 2/2 mla

BERIC, Berislav, dr.; MILOJKOVIC, Aleksandar; KOLBAS, Eugen; LUKIC, Vladimir

Contribution to the study of the problem of uterine torsion in pregnancy. Srpski arh. celok. lek. 89 no.3:379-382 Mr '61.

1. Ginekolosko-akusersko odeljenje Opste bolnice u Zenici. Sef: dr Berislav Beric.

(UTERUS dis) (PREGNANCY compl)

ALYSHEV, Ivan Fedorovich; SOF'INA, Antonina Aleksandrovna; ANDROSOV, D.L., inzh., retsenzent; KOLEAS, N.S., inzh., retsenzent; YABLOCHKIN, A.A., inzh., otv. red.; FILONENKO, K.D., red.; URITSKAYA, A.D., tekhn. red.

[Testing the road properties of soils] Ispytanie dorozhnykh svoistv gruntov; posobie k laboratornym rabotam (dlia studentov lesoinzhenernogo fakul'teta). Leningrad, Vses. zaochnyi lesotekhnicheskii in-t, 1963. 56 p. (MIRA 16:10)

(Soil mechanics)

KOLBAS, N.S.

New methods of consolidating soil for road building purposes.
Nauch. trudy LTA no.96:147-154 '61. (MIRA 17:3)

YUGOSLAVIA

KOLBAS, Dr. Vladimir, Center for the Protection of Mother and Child (Centar za zastitu majki i djece), Zagreb (Director: Prof. Dr. K. Pansini, Zagreb)

"New Horizons in Genetics"

Belgrade, Medicinski Glasnik, Vol 20, No 5-6, May-June 1966, p. 167-169

Abstract: Review of recent literature on genetic problems from Watson and Crick to Jacob Monod, H. F. Muller and others. Mutations, transformation, the clonus concept, various other terms and their significance; possible applications and uses in human genetics. 17 Western references.

1/1

KOLBAS, Vladimir, dr.

Congenital abnormalities in children of a region of Croatia.
Lijecn. vjesn. 86 no.6:675-682 Je '64

1. Iz Centra za zastitu majki i djece SRH u Zagrebu.

KOLBASIN, G.M.

PARAMONOV, V.I., insh.; KOLBASIN, G.M., insh.; VAVILOV, V.V., insh.

Unit of equipment with the M-9 support. Mekh.trud.rab. 11 no.8:17-21 Ag '57. (MIRA 10:11)
(Coal mines and mining--Equipment and supplies)

KOLBASIN, G.M.

(5)

KOLBASIN, G. M., Soviet Research Institute of Mining Industry [sic] - "Mechanization of supports and roof control of mines in the Soviet Union" (Section IV)

LIDIN G.D., Academy of Sciences USSR - "Up-to-date methods of prognosis of methane emission in coal mines" (Section V)

MAN'KOVSKIY, G. I., Institute of Mining, Academy of Sciences USSR - "Development of shaft mining techniques in the USSR" (Section I)

Reports to be submitted for the Symposium on Mechanization of Mines in India, Dhanbad, India, 9-12 December 1961

KOLBASIN, P. I.

Tobacco

Tobacco culture in a consolidated collective farm. Tabak 13, No. 3, 1952

9. Monthly List of Russian Accessions, Library of Congress, September 1953, Uncl.

KUHBATSKIY, O., kand.tekhn.nauk; KOLBASIN P., insh.

The G-600 hydraulic ram. Posh.delo 4 no.11:18-19 N '58.
(MIRA 11:12)

(Hydraulic rams)

OATUL, A.A., dotsent, kand. tekhn. nauk; KOLMAGIN, V.G., aspirant

Calculating crack resistance of prestressed concrete beams. Sbor. trud. Inzh.-stroi. fak. Chel. politekh. inst. no.3:7-13 '63. (MIRA 17:9)

KOLBASIN, V.G., aspirant; TSEKI MISTROV, V.M., assistent; TRUSOVA, O.V., inzh.; [redacted] V.A., inzh.

Practices in using the ultrasonic pulse method of controlling the strength of concrete in construction trusts of the city of Chelyabinsk. Sbor. trud. Inzh.-stroi. fak. Chel. politekh. inst. no.3:74-82 '63. (MIRA 17:9)

1. Trest Chelyabmetallurgstroy (for Trusova).

FIKLISOVA, L.S.; KOLBASINA, A.S.

Amount of methyl alcohol in wines. Gig. i san. 26 no.5:109-112 My '61.
(MIRA 15:4)

1. Iz Kontrol'noy laboratorii 4-go Glavnogo upravleniya pri Ministerstve zdravookhraneniya SSSR.

(METHANOL) (WINE AND WINE MAKING)

KOLBASINA, E.I.

Effect of light conditions on the development of short-day plants. Trudy Sakh. kompl. nauch.-issl. inst. AN SSSR no. 9:94-100 '60. (MIRA 14:4)

(Plants, Effect of light on)

KOLBASINA, E.I.

Biology of corn in Sakhalin. Trudy Sakh. kompl. nauch.-issl. inst. AN SSSR no. 9:101-107 '60. (MIRA 14:4)
(Sakhalin--Corn (Maize))

KOLBASINA, Ye.I.

Speeding up the germination of Chinese ginseng seeds under various thermal conditions. Trudy Sakh. kompl. nauch.-issl. inst. AN SSSR no. 9:133-136 '60. (MIRA 14:4)

(Ginseng) (Germination)

KOLBASNIKOV, A. I.

33192. Polucheniye Vysokokaloringo Gaza Iz Mestnykh Vetkykh Vidov Topliva (Us tanovka Klinsk. Stekol'nogo Zavoda). Med. Prom-St' SSSR, 1949, No.5 C. 41-43

SO: Letopis' Zhurnal'nykh Statey, Vol.45, Moskva, 1949

KOLBASNIKOV, M.V.

KOSTENKO, M.P.; KULEBAKIN, V.S.; LARIONOV, A.N.; PETROV, G.N.; NITUSOV, Ye.V.; BOGOYAVLENSKIY, V.N.; KUDAKOV, V.V.; KOLBASNIKOV, M.V.

N.V. Gorokhov; obituary. Elektrichestvo no.1:95 Ja '56.(MLRA 9:3)
(Gorokhov, Nikolai Vladimirovich, 1896-1955)

BROMBERG, Boris Moiseyevich; KOLBASNIKOV, N.A., nauchnyy red.; KONTSEVAYA, E.M., red.; GOROKHOV, Yu.N., tekhn.red.

[Modern radial drilling machines] Sovremennye radial'no-sverlil'nye stanki. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1958. 97 p. (MIRA 12:1)

(Drilling and boring machinery)

METELKIN, A.I., kand. tekhn. nauk; KOLBASNIKOVA, N.I., kand. tekhn. nauk
KOLBASNIKOVA, A.I., insh.

Wear resistance of some foreign sole leathers. Kozh.-obuv. prom. no.11:17-19 N '59. (MIRA 13:3)
(Leather)

KOLBASNIKOVA, A. I., Aspirant

"An Investigation of the Influence of the Chemical Composition of Glass on the Vitrification Temperature and on the Annealing Rate." Cand Tech Sci; All-Union Sci-Res Inst of Glass, Ministry of the Construction Materials Industry, USSR, 23 Nov 54. (VM, 12 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55